

REPTILES OF THE VICTORIAN MALLEE

By P. A. RAWLINSON

Zoology Department, University of Melbourne

Abstract

73 species of reptiles representing 9 families are recorded with specific locality data from the Victorian Mallee. None of these species is restricted to the area, and the Eyrean affinities of the reptile fauna are shown by comparison with the reptile faunas of (a) Gippsland (SE. Victoria; Bassian) and (b) S. Western Australia (Eyrean with some Bassian).

Introduction

In 1896, Spencer proposed a scheme which divided Australia into three faunal subregions, the Bassian, Eyrean, and Torresian. Subsequently, Serventy & Whittell (1951) added a fourth 'district', the South-Western, which was formed by the blending of Bassian and Eyrean elements in the south-west of Australia. These four divisions have gained recognition as the main faunal zones (or subregions) in Australia (Main, Lee, & Littlejohn 1958; Keast 1959) and may be defined as follows:

1. The Bassian subregion; a SE. coastal cool-temperate area with uniform seasonal rainfall.
2. The Torresian subregion; a NE. and N. coastal tropical area with summer maximum rainfall.
3. The South-Western subregion; a SW. coastal cool-temperate area with winter maximum rainfall.
4. The Eyrean subregion; the rest of the Australian continent, hot and with a low and irregular rainfall.

Although these faunal subregions are here defined areally, the terms are also used to refer to the biota of the respective areas.

Most of Victoria lies in the area which fits Spencer's Bassian subregion, but the Mallee lies within the Eyrean subregion. Thus, the Mallee district is an important faunal region when the distributions of Victorian animal species are being considered. In an attempt to determine whether the reptile fauna shows Eyrean affinities, comparisons are made with the faunas of (a) Gippsland, Victoria (Bassian) and (b) S. Western Australia (Eyrean with some Bassian).

The limits of the Victorian Mallee have been defined in at least three ways. Firstly there is the botanical boundary (Blackburn 1964), secondly the 1944 Mallee regional boundary (Central Planning Authority 1952), and thirdly the Mallee district boundary as used throughout the ANZAAS book *Introducing Victoria* (Leeper 1955). None of these is entirely suitable for the present purposes since the reptile fauna of NW. Victoria is comparatively uniform and shows little dependence on vegetation. Hence, somewhat arbitrary limits have been selected which include all three boundaries listed above. These limits are as follows: northern, the Victoria-New South Wales border (Murray R.); western, the Victoria-South Australia border; southern, latitude 36° 30' S.; and eastern, longitude 144° E.

The list of species in this paper cannot be taken as a complete or final assess-

ment, since the reptile fauna of the Mallee is very poorly known. Further field work in the area will almost certainly add more species to the list. As the fauna becomes better known, taxonomic changes are also to be expected. Specific locality records are given wherever possible as a first attempt at defining the distribution and abundance of species. These locality records are drawn from three main sources:

1. Specimens examined in the collection of the University of Melbourne Zoology Department, and the author's field records—such data are designated by (MUZD).
2. Specimens listed in the Reptile catalogue of the National Museum, Melbourne—such data are designated (NM).
3. References in the literature—such data are acknowledged to the original authors, e.g. (Worrell 1963).

The recent elapine generic name changes by Worrell (1961, 1963) have not gained any support to date, so to avoid further confusion the older, accepted, generic names (Kingham 1956) are used in this paper. Also, to standardize the spelling and taxonomy of the higher groups (families, etc.), the classification used by Romer (1956) has been adopted here.

CHELONIA

CHELYIDAE

Chelodina expansa Gray

Specimens examined (MUZD): L. Boga; Kerang.

Additional records (NM): Nil.

Literature: Murray R. and tributaries (Worrell 1963).

Chelodina longicollis (Shaw)

Specimens examined (MUZD): L. Cullulleraine; 1 mile E. of Merbein; Mildura;

L. Boga; Kerang.

Additional records (NM): Nil.

Literature: Murray system (Worrell 1963).

Emydura macquarii (Gray)

Specimens examined (MUZD): Red Cliffs; L. Boga; Kerang.

Additional records (NM): Nil.

Literature: Murray-Darling system (McCoy 1885 as *Chelmys macquaria*); large river systems of the Murray, Murrumbidgee, and Macquarie R. (Worrell 1963).

SQUAMATA

LACERTILIA

AGAMIDAE

Amphibolurus adelaidensis (Gray)

Specimens examined (MUZD): Nil.

Additional records (NM): Dimboola.

Literature: Dimboola (Lucas & Frost 1893).

Amphibolurus decresii (Duméril & Bibron)

Specimens examined (MUZD): Pine Plains, 15 miles W. of Patchewollock.

Additional records (NM): Nil.

Literature: Nil.

***Amphibolurus barbatus* (Cuvier)**

Specimens examined (MUZD): 9 miles E. of Lock No. 9, Murray R.; 9 miles W. of Merbein; Mildura; Cullulleraine; Irymple; Meringur; Carwarp; 4 miles N. of Hattah; 2 miles NE. of Wemen; 9 miles W. of Wemen; 10 miles NW. of Annuello; 10 miles W. of Boundary Bend; 2 miles N. of Kiamil; 5 miles NW. of Piangil; 3 miles E. of Manangatang; Ouyen; Nyah; 6 miles SE. of Nyah; 5 miles NW. of Swan Hill; 6 miles NW. of Mystic Park; 1 mile S. of Kerang; 4 miles N. of Tempy; 6 miles NW. of Charlton.

Additional records (NM): Red Cliffs; Boyco; Little Desert; Kewell.
Literature: Nil.

***Amphibolurus maculatus* (Gray)**

Specimens examined (MUZD): Mildura; 4 miles N. of Hattah.
Additional records (NM): Red Cliffs.
Literature: Nil.

***Amphibolurus muricatus* (Shaw)**

Specimens examined (MUZD): 5 miles N. of Hattah; Pine Plains, 15 miles W. of Patchewollock.
Additional records (NM): Hattah; Ouyen; Woomelang; Kiata.
Literature: Nil.

***Amphibolurus pictus* Peters**

Specimens examined (MUZD): Mildura; Pine Plains, 15 miles W. of Patchewollock; 5 miles S. of Kiata.
Additional records (NM): Red Cliffs; Hattah; 5 miles N. of Sunset Tank; Ouyen; 30 miles S. of Murrayville; Nhill; Dimboola; Little Desert.
Literature: Murrayville (Barrett 1932); Dimboola (Lucas & Frost 1893).

***Physignathus gilberti* (Gray)**

Specimens examined (MUZD): Nil.
Additional records (NM): Kurnwill near Werrimull.
Literature: Werrimull, NW. Vict. (Brazenor 1932).

***Tympanocryptis lineata* Peters**

Specimens examined (MUZD): Nil.
Additional records (NM): Red Cliffs.
Literature: Mildura (Mitchell 1948).

GEKKONIDAE

***Diplodactylus strophurus intermedius* Ogilby**

Specimens examined (MUZD): Nil.
Additional records (NM): Red Cliffs; Raak Plains; Ouyen; Chillingollah; Kewell; Nyang, Mallee, Vict.
Literature: NW. Victoria (Brazenor 1951); L. Albacutya (Lucas & Frost 1893 as *D. strophurus*); Kewell (Lucas & Frost 1893 as *D. strophurus*).

***Diplodactylus tessellatus* Günther**

Specimens examined (MUZD): Nil.
Additional records (NM): Kewell; Mallee, Vict.
Literature: Dimboola (Lucas & Frost 1893); Kewell (Lucas & Frost 1893).

Diplodactylus vittatus Gray

Specimens examined (MUZD): Mildura.
Additional Records (NM): Ouyen; NW. Victoria.
Literature: Dimboola (Lucas & Frost 1893).

Gehyra variegata (Duméril & Bibron)

Specimens examined (MUZD): Mildura; 2 miles NE. of Wemen.
Additional records (NM): Werrimull; Red Cliffs; Mallee, Vict.
Literature: Murray R. between Swan Hill and Mildura (Lucas & Frost 1893).

Gymnodactylus milii (Bory)

Specimens examined (MUZD): Mt Korong, Wedderburn.
Additional records (NM): Meringur; Karawinna; Red Cliffs; Ouyen; Waitchie;
L. Boga; Woomelang; Tittybong; Quambatook; Nyang, Vict.
Literature: Dimboola (Lucas & Frost 1893).

Heteronota binoei Gray

Specimens examined (MUZD): Mildura.
Additional records (NM): Mildura; Karawinna; Red Cliffs; Mallee, Vict.
Literature: Nil.

Lucasius damaeus (Lucas & Frost)

Specimens examined (MUZD): Nil.
Additional records (NM): Red Cliffs; Ouyen; Nyang, Mallee, Vict.
Literature: Nil.

Phyllodactylus marmoratus (Gray)

Specimens examined (MUZD): 4 miles W. of Lock No. 9, Murray R.; Mildura;
Wycheproof; Fernihurst; Mt Korong, Wedderburn.
Additional records (NM): Karawinna; Red Cliffs; Kerang; Warracknabeal; Little
Desert.
Literature: Dimboola (Lucas & Frost 1893).

Rhynchoedura ornata Günther

Specimens examined (MUZD): Nil.
Additional records (NM): Red Cliffs.
Literature: Nil.

PYGOPODIDAE

Aprasia pulchella Gray

Specimens examined (MUZD): Nil.
Additional records (NM): Mildura; L. Wallace; Ouyen.
Literature: Nil.

Delma fraseri Gray

Specimens examined (MUZD): Nil.
Additional records (NM): Karawinna; Narung; Hattah; Natya; Ouyen; Swan Hill;
Woomelang; Kewell; Wedderburn.
Literature: Kewell (Lucas & Frost 1893).

Delma impar (Fischer)

Specimens examined (MUZD): L. Mcering, 12 miles SW. of Kerang; Wycheproof.
Additional records (NM): Nil.
Literature: Nil.

***Lialis burtonis* Gray**

Specimens examined (MUZD): Mildura; Koorlang; Woomelang.
 Additional records (NM): Red Cliffs; Narung; Ouyen; Mallee, Vict.
 Literature: Mallee scrub and warmer parts of Victoria (McCoy 1885).

***Pygopus lepidopodus* (Lacépède)**

Specimens examined (MUZD): Rock Hole Bore, Sunset country.
 Additional records (NM): Mildura; Yatpool; Ouyen; Wycheproof; Little Desert.
 Literature: Kewell (Lucas & Frost 1893).

SCINCIDAE

***Ablepharus boutonii* (Desjardin)**

Specimens examined (MUZD): Mildura.
 Additional records (NM): Mildura; Irymple; Red Cliffs; Little Desert; Kewell.
 Literature: Swan Hill (Lucas & Frost 1893); Dimboola (Lucas & Frost 1893).

***Ablepharus greyii* (Gray)**

Specimens examined (MUZD): Mildura.
 Additional records (NM): Red Cliffs; Pink Lakes, 35 miles W. of Ouyen; Ouyen; Chillingollah.
 Literature: Nil.

***Ablepharus lineatus* (Bell)**

Specimens examined (MUZD): Nil.
 Additional records (NM): Mildura.
 Literature: Nil.

***Ablepharus lineocellatus* Duméril & Bibron**

Specimens examined (MUZD): Lock No. 9, Murray R.; Mildura; Red Cliffs; 2 miles NE. of Wemen; 13 miles WNW. of Piangil; Manangatang; 8 miles N. of Underbool; Tutyc; 10 miles W. of Patchewollock; 8 miles E. of Patchewollock; Rainbow; Kenmerc; Wycheproof; 6 miles SE. of Wycheproof.
 Additional records (NM): Pink Lakes; Ouyen; Dimboola; Kewell.
 Literature: Dimboola (Lucas & Frost 1893).

***Ablepharus timidus* De Vis**

Specimens examined (MUZD): Mildura; Locality outside Mallee—4 miles W. of Euston, N.S.W.
 Additional records (NM): Mildura; Mallee, Vict.
 Literature: Nil.

***Egernia inornata* Rosén**

Specimens examined (MUZD): Locality outside Mallee—Renmark, S.A.
 Additional records (NM): Hattah; 5 miles N. of Sunset Tank.
 Literature: Nil.

***Egernia kintorei* Stirling & Zietz**

Specimens examined (MUZD): Nil.
 Additional records (NM): Nil.
 Literature: Desert of N. Victoria (Worrell 1963).

***Egernia striolata* (Peters)**

Specimens examined (MUZD): 4 miles W. of Lock No. 9, Murray R.; Red Cliffs.
 Additional records (NM): Red Cliffs; L. Meran; Mallee, Vict.
 Literature: Dimboola (Lucas & Frost 1893).

Egernia whiteii (Lacépède)

Specimens examined (MUZD): Nil.
Additional records (NM): Woomelang.
Literature: Nil.

Hemiergis decresiensis (Fitzinger)

Specimens examined (MUZD): Mt Korong, Wedderburn.
Additional records (NM): Mildura; Red Cliffs.
Literature: Nil.

Hemiergis peronii (Fitzinger)

Specimens examined (MUZD): Nil.
Additional records (NM): Mallee district, Victoria.
Literature: Nil.

Rhodona bipes Fischer

Specimens examined (MUZD): Nil.
Additional records (NM): NW. Victoria.
Literature: Nil.

Rhodona bougainvillii (Gray)

Specimens examined (MUZD): Rainbow.
Additional records (NM): Pink Lakes, 35 miles W. of Ouyen; Ouyen; Little Desert; Kewell.
Literature: Nil.

Rhodona punctovittata Günther

Specimens examined (MUZD): 10 miles W. of Patchewollock; locality outside Mallee—Wentworth, N.S.W.
Additional records (NM): Mildura; Irymple; Karawinna; Red Cliffs; Pink Lakes, 35 miles W. of Ouyen; Ouyen; Woomelang.
Literature: Swan Hill (McCoy 1885 as *R. officeri*); Swan Hill (Lucas & Frost 1893).

Sphenomorphus fasciolatus (Günther)

Specimens examined (MUZD): Nil.
Additional records (NM): Mildura.
Literature: Nil.

Sphenomorphus lesueurii (Duméril & Bibron)

Specimens examined (MUZD): Mildura; 4 miles N. of Hattah; Hattah; Mt Korong, Wedderburn.
Additional records (NM): Mildura; Red Cliffs; Ouyen.
Literature: Nil.

Sphenomorphus quoyii quoyii (Duméril & Bibron)

Specimens examined (MUZD): 4 miles W. of Lock No. 9, Murray R.
Additional records (NM): Nil.
Literature: Nil.

Sphenomorphus taeniolatus (Shaw)

Specimens examined (MUZD): Nil.
Additional records (NM): Irymple.
Literature: Nil.

Tiliqua occipitalis (Peters)

Specimens examined (MUZD): Kiata.

Additional records (NM): Red Cliffs; Ouyen.

Literature: N. Victoria (Mitchell 1950); Mallee, N. Victoria (Worrell 1963).

***Tiliqua rugosa* (Gray)**

Specimens examined (MUZD): 2 miles W. of Lock No. 9, Murray R.; 10 miles E. of Lock No. 9, Murray R.; 6 miles W. of Merbein; 3 miles N. of L. Cullulleraine; 9 miles N. of Carwarp; 4 miles S. of Carwarp; 16 miles N. of Hattah; 1 mile S. of Bannerton; 9 miles E. of Hattah; 4 miles W. of Wemen; 8 miles S. of Hattah; 1 mile NW. of Annuello; 1 mile N. of Kiamil; 10 miles N. of Underbool; 10 miles W. of Ouyen; Walpeup; 20 miles E. of Manangatang; 10 miles SSE. of Ouyen; Tutye; 8 miles E. of Patchewollock; 1 mile S. of Tempy; 4 miles SSE. of Turriff.

Additional records (NM): Ouyen; Nhill; Little Desert; Kewell.

Literature: Murrayville (Barrett 1926 as *Trachysaurus rugosus*); Kewell (Lucas & Frost 1893 as *Trachysaurus rugosus*); Kewell (McCoy 1885 as *Trachysaurus rugosus*).

***Tiliqua scincoides* (Shaw)**

Specimens examined (MUZD): Kerang.

Additional records (NM): Nil.

Literature: Nil.

VARANIDAE

***Varanus gouldii* (Gray)**

Specimens examined (MUZD): 10 miles S. of Mildura; Carwarp; 5 miles N. of Hattah; Manangatang; 1 mile NW. of Nyah; 8 miles N. of Tempy.

Additional records (NM): Karawinna; Ouyen.

Literature: Kewell (McCoy 1885 as *Monitor gouldii*).

***Varanus varius* (Shaw)**

Specimens examined (MUZD): 10 miles NW. of Annuello; Wycheproof.

Additional records (NM): Liparoo.

Literature: Warmer parts (of Victoria) on the Murray Plains (McCoy 1885 as *Hydrosaurus varius*).

OPHIDIA

BOIDAE

***Morelia argus variegata* Gray**

Specimens examined (MUZD): Locality outside Mallee—Renmark, S.A.

Additional records (NM): Mildura; Kerang; Murray R., Vict.

Literature: N. Murray boundary (of Victoria) (McCoy 1885).

ELAPIDAE

***Acanthophis antarcticus* (Shaw)**

Specimens examined (MUZD): Nil.

Additional records (NM): Banks of Murray, Victoria.

Literature: L. Boga (Krefft 1863); hot tracts (in Victoria) near the Murray (McCoy 1885).

***Brachyaspis curta* (Schlegel)**

Specimens examined (MUZD): 10 miles S. of Kiata.

Additional records (NM): Kiata; Mallee, Vict.

Literature: Nil.

Brachyurophis australis (Krefft)

Specimens examined (MUZD): Nil.

Additional records (NM): Vinifera; Tempy; Speed; Tarnt; Woomelang.

Literature: Mallee, NW. Victoria (Kershaw 1917).

Demansia nuchalis (Günther)

Specimens examined (MUZD): Locality outside Mallee—Renmark, S.A.

Additional records (NM): Junction of Murray and Darling R.; Irymple; Red Cliffs; Hattah; Nyang.

Literature: NW. of Victoria (Worrell 1963).

Demansia psammophis (Schlegel)

Specimens examined (MUZD): Nil.

Additional records (NM): Red Cliffs.

Literature: Nil.

Demansia textilis (Duméril & Bibron)

Specimens examined (MUZD): Lock No. 9, Murray R.; 10 miles W. of Boundary Bend; 6 miles ESE. of Boundary Bend; 5 miles E. of Hattah; Torrita; 1 mile NW. of Nyah; 5 miles NW. of Swan Hill; 2 miles NW. of Mystic Park; Wycheproof.

Additional records (NM): Mildura; Irymple; Red Cliffs; Kulkyne; Natya; Ouyen; Cowangie; Swan Hill; Hopctoun; Rosebery; Kaniva; Kiata; Dimboola; Kewell; Cow Plains, Mallee, Vict.; Nyang station via Balpool.

Literature: Nil.

Denisonia devisi Waite & Longman

Specimens examined (MUZD): Nil.

Additional records (NM): Nil.

Literature: Junction of the Murray and Darling R. (Worrell 1963).

Denisonia flagellum (McCoy)

Specimens examined (MUZD): Nil.

Additional records (NM): Mallee, Vict.

Literature: Nil.

Denisonia gouldii (Gray)

Specimens examined (MUZD): Nil.

Additional records (NM): Ouyen; Sea Lake; Kewell; Mallee, Vict.

Literature: Nil.

Denisonia nigrostriata (Krefft)

Specimens examined (MUZD): Nil.

Additional records (NM): Ouyen.

Literature: NW. Victoria (Kershaw 1917); NW. Victoria (Mitchell 1951).

Denisonia suta (Peters)

Specimens examined (MUZD): L. Mcering, 12 miles SW. of Kerang.

Additional records (NM): Mallee, Vict.

Literature: Nil.

Notechis scutatus (Peters)

Specimens examined (MUZD): Mildura; Kerang.

Additional records (NM): Junction of Murray and Darling R.; Mallee, Vict.

Literature: Murray R. district (Worrell 1963).

Oxyuranus scutellatus (Peters)

Specimens examined (MUZD): Nil.

Additional records (NM): Junction of the Murray and Darling R.

Literature: Junction of Murray and Darling (McCoy 1889 as *Diemenia microlepidotus*); N. Victoria (Boulenger 1896 as *Pseudechis microlepidotus*); N. Victoria (Waite 1929 as *Pseudechis microlepidotus*); N. Victoria (Mitchell 1950 as *Pseudechis microlepidotus*); Along the Darling from Bourke to the junction of the Murray and the Darling (Kinghorn 1956 as *Parademansia microlepidotus*); Junction of the Murray and Darling (Worrell 1963).

Pseudechis australis (Gray)

Specimens examined (MUZD): Locality outside Mallee—Renmark, S.A.

Additional records (NM): Nil.

Literature: Kewell (McCoy 1885); far inland all states except Tasmania (Worrell 1963).

Pseudechis porphyriacus (Shaw)

Specimens examined (MUZD): Mildura; Kerang.

Additional records (NM): Nil.

Literature: Murray R. (Worrell 1963).

Vermicella annulata (Gray)

Specimens examined (MUZD): Nil.

Additional records (NM): Meringur; Red Cliffs; Hattah; Ouyen; Patchewollock; Woomelang; Kerang; Nhill.

Literature: Patchewollock (Kershaw 1917 as *Furina occipitalis*).

TYPHLOPIDAE

Typhlops australis (Gray)

Specimens examined (MUZD): Nil.

Additional records (NM): Ouyen; Beulah; Mallee, Vict.

Literature: Southern Australia—Hopetoun area, Birchip area, Ouyen area (Waite 1918).

Typhlops bituberculatus (Peters)

Specimens examined (MUZD): Wyperfeld; Rainbow; Barrapoort.

Additional records (NM): Mildura; Carwarp; Ouyen; Woomelang; Beulah; Nhill; Gerang; Myall via Koondrook.

Literature: All Australia, abundant in south—Hopetoun area, Birchip area, Ouyen area, Ultima area (Waite 1918).

Typhlops broomi Boulenger

Specimens examined (MUZD): Nil.

Additional records (NM): Nil.

Literature: Mallee, Victoria—Hopetoun area (Waite 1918).

Typhlops ligatus Peters

Specimens examined (MUZD): Nil.

Additional records (NM): Mallee, Vict.

Literature: Victoria—Underbool area (Waite 1918).

Typhlops nigrescens (Gray)

Specimens examined (MUZD): Nil.

Additional records (NM): Mildura; Irymple; Robinvale; Woomelang; Donald; Kewell.

Literature: Victoria—Hopetoun area (Waite 1918).

***Typhlops pinguis* Waite**

Specimens examined (MUZD): Nil.

Additional records (NM): Pink Lakes, 35 miles W. of Ouyen.

Literature: Mallee, Victoria—Hopetoun area (Waite 1918).

***Typhlops proximus* Waite**

Specimens examined (MUZD): Nil.

Additional records (NM): Charlton; Mallee, Vict.

Literature: N. Victoria—Mildura area, Hopetoun area, Kerang area (Waite 1918).

***Typhlops unguistrostris* Peters**

Specimens examined (MUZD): Nil.

Additional records (NM): Mallee, Vict.

Literature: Mallee, Victoria—Hopetoun area (Waite 1918).

Discussion

In this paper 73 species of reptiles representing 34 genera and 9 families are recorded from the Victorian Mallee. None of the 73 species is restricted to this area and most also occur extensively in the desert and semi-desert regions of Australia. The Mallee reptile fauna therefore shows no endemism and the Mallee cannot be considered as a separate faunal division.

As has already been pointed out, most of Victoria lies in Spencer's (1896) Bassian zoogeographic subregion, but the Mallee lies in the Eyrean subregion. Thus, if Spencer's scheme applies to the reptiles, and Kest (1959) has already suggested that it could, the Mallee reptile fauna would be Eyrean in nature.

In order to determine the affinities of the Mallee reptile fauna, it is compared to that of two other areas. Firstly, the Mallee reptile fauna is compared with that of a typical Bassian area: Gippsland, a SE. Victorian district of approximately the

TABLE I

Comparison of Mallee and Gippsland Reptile Faunas

Family	Number of Species in the Mallee	Number of Species in Gippsland	Number of Shared Species
CHELONIA			
CHELYIDAE	3	1	1
LACERTILIA			
AGAMIDAE	8	3	1
GEKKONIDAE	9	—	—
PYGOPODIDAE	5	—	—
SCINCIDAE	21	19	4
VARANIDAE	2	1	1
OPHIDIA			
BOIDAE	1	—	—
ELAPIDAE	16	7	3
TYPHLOPIDAE	8	—	—
TOTAL	73	31	10

same size as the Mallee (Leeper 1955). Data on Gippsland reptiles were obtained from the University of Melbourne Zoology Department collection and the author's field records. Secondly, the Mallee reptile fauna is compared with that of a predominantly Eyrean area: S. Western Australia. This was taken as the area of Western Australia S. of a line passing E.-W. through Geraldton. It is not an ideal area for listing Eyrean species as it includes Scrventy & Whittell's (1951) South-Western subregion with some Bassian elements; however, it is the only suitable region with a reasonably complete reptilian fauna list (Glauert 1957, 1961; Worrell 1963). The size of the Bassian component in the South-Western subregion is demonstrated by a comparison of the reptile faunas of Gippsland and S. Western Australia.

FAUNAL RELATIONSHIPS OF THE VICTORIAN MALLEE AND GIPPSLAND

There are only 31 species of reptiles in Gippsland (Table 1). 10 of these species are shared with the Mallee which has 73 species. The shared species are:

C. longicollis, *A. muricatus*, *E. whiteii*, *H. decresiensis*, *R. bougainvillii*, *T. scincoides*, *V. varius*, *D. textilis*, *N. scutatus*, *P. porphyriacus*. 4 of these species, *C. longicollis*, *T. scincoides*, *N. scutatus*, and *P. porphyriacus*, are associated exclusively with the Murray R. in the Mallee region.

16 genera of reptiles occur in Gippsland and 13 are shared with the Mallee which has 34 genera (Table 4). The shared genera are:

Chelodina, *Amphibolurus*, *Physignathus*, *Egernia*, *Hemiergis*, *Rhodona*, *Sphenomorphus*, *Tiliqua*, *Varanus*, *Demansia*, *Denisonia*, *Notechis*, *Pseudechis*. The scincid genus *Leiopisma*, which has 8 species in Gippsland, is unrepresented in the Mallee. Conversely, the scincid genus *Ablepharus*, which has 5 species in the Mallee, is unrepresented in Gippsland.

5 families of reptiles occur in Gippsland and all are shared with the Mallee (Table 1). However, another 4 families of reptiles, the *Gekkonidae*, *Pygopodidae*, *Boidae*, and *Typhlopidae*, which are represented in the Mallee by 9, 5, 1 and 8 species respectively, are absent from Gippsland.

TABLE 2

Comparison of Mallee and S. Western Australian Reptile Faunas

Family	Number of Species in the Mallee	Number of Species in S. Western Australia	Number of Shared Species
CHELONIA			
CHELYIDAE	3	3	—
LACERTILIA			
AGAMIDAE	8	15	7
GEKKONIDAE	9	16	8
PYGOPODIDAE	5	10	4
SCINCIDAE	21	45	15
VARANIDAE	2	5	1
OPHIDIA			
BOIDAE	1	3	1
ELAPIDAE	16	21	9
TYPHLOPIDAE	8	11	4
TOTAL	73	129	49

In summary, it can be seen that only 14% of the species, 38% of the genera, and 56% of the families of reptiles in the Mallee also occur in Gippsland (Table 4). This indicates that there is a striking difference between the faunas of these two areas, even though they are only separated by about 200 miles.

FAUNAL RELATIONSHIPS OF THE VICTORIAN MALLEE AND SOUTHERN WESTERN AUSTRALIA

As mentioned earlier, S. Western Australia includes Serventy & Whittell's (1951) South-Western subregion with Eyrean and Bassian elements. Thus, before comparing the Mallee reptile fauna to that of S. Western Australia, the size of the Bassian component must be measured. This can best be done by comparing the Gippsland reptile fauna (Bassian) with that of S. Western Australia at the specific level.

6 species of reptiles are shared between Gippsland and S. Western Australia (Table 3). The shared species are:

A. muricatus, *E. whiteii*, *L. metallicum*, *L. trilineatum*, *D. coronoides*, *N. scutatus*.

These species may be considered as Bassian forms on the basis of their general distributions (Keast 1959, Rawlinson unpublished). Thus, at most, only 6 of the 129 species of reptiles in S. Western Australia are Bassian forms. As this is less than 5% of the species, the S. Western Australian reptile fauna is clearly of a predominantly Eyrean nature.

TABLE 3
Comparison of Gippsland and S. Western Australian Reptile Faunas

Family	Number of Species in Gippsland	Number of Species in S. Western Australia	Number of Shared Species
CHELONIA			
CHELYIDAE	1	3	—
LACERTILIA			
AGAMIDAE	3	15	1
GEKKONIDAE	—	16	—
PYGOPODIDAE	—	10	—
SCINCIDAE	19	45	3
VARANIDAE	1	5	—
OPHIDIA			
BOIDAE	—	3	—
ELAPIDAE	7	21	2
TYPHLOPIDAE	—	11	—
TOTAL	31	129	6

There are 129 species of reptiles in S. Western Australia (Table 2). 49 of these species are shared with the Mallee which has 73 species. The shared species are:

A. adelaidensis, *A. barbatus*, *A. decresii*, *A. maculatus*, *A. muricatus*, *A. pictus*, *T. lineata*, *D. strophurus*, *D. vittatus*, *G. variegata*, *G. milii*, *H. binoei*, *L. damaeus*, *P. marmoratus*, *R. ornata*, *A. pulchella*, *D. fraseri*, *L. burtonis*, *P. lepidopodus*, *A. boutonii*, *A. greyii*, *A. lineatus*, *A. lineocellatus*, *A. timidus*, *E. inornata*, *E. kintorei*, *E. whiteii*, *H. peronii*, *R. bipes*, *S. fasciolatus*, *S.*

lesueurii, *S. taeniolatus*, *T. occipitalis*, *T. rugosa*, *V. gouldii*, *M. argus variegata*, *A. antarcticus*, *B. curta*, *D. nuchalis*, *D. psammophis*, *D. gouldii*, *D. suta*, *N. scutatus*, *P. australis*, *V. annulata*, *T. australis*, *T. bituberculatus*, *T. broomi*, *T. pinguis*. 3 of these species *A. muricatus*, *E. whiteii*, and *N. scutatus* are also shared with Gippsland.

44 genera of reptiles occur in S. Western Australia and 32 are shared with the Mallee which has 34 genera (Table 4). This shared genera are:

Chelodina, *Amphibolurus*, *Physignathus*, *Tympanocryptis*, *Diplodactylus*, *Gehyra*, *Gymnodactylus*, *Heteronota*, *Lucasius*, *Phyllodactylus*, *Rhynchoedura*, *Aprasia*, *Delma*, *Lialis*, *Pygopus*, *Ablepharus*, *Egernia*, *Hemiergis*, *Rhodona*, *Sphenomorphus*, *Tiliqua*, *Varanus*, *Morelia*, *Acanthophis*, *Brachyaspis*, *Brachyurops*, *Demansia*, *Denisonia*, *Notechis*, *Pseudechis*, *Vermicella*, *Typhlops*. The scincid genus *Ablepharus* is represented in S. Western Australia by 7 species including the 5 forms present in the Mallee. This contrasts with the situation in Gippsland where the genus is unrepresented. The scincid genus *Leiopisma* is also represented in S. Western Australia but the only 2 species (*L. metallicum* and *L. trilineatum*) are both Bassian intrusives in the South-Western subregion (see earlier).

S. Western Australia and the Mallee contain the same 9 families (Table 2). The 4 families *Gekkonidae*, *Pygopodidae*, *Boidae*, and *Typhlopidae*, which are not represented in Gippsland, are well represented in S. Western Australia, and share many species with the Mallee.

In summary, it can be seen that 67% of the species, 94% of the genera, and 100% of the families of reptiles in the Mallee also occur in S. Western Australia (Table 4). Thus, there are great similarities between the reptile faunas of these two areas even though they are separated by at least 800 miles.

TABLE 4

Summary of the similarities of the reptile fauna of the Mallee with those of S. Western Australia and Gippsland at the specific, generic, and family levels

Taxa		Number in the Mallee	Number shared with S. Western Australia	Number shared with Gippsland
Species	No.	73	49 (129)	10 (31)
	%	100	67	14
Genera	No.	34	32 (44)	13 (16)
	%	100	94	38
Families	No.	9	9 (9)	5 (5)
	%	100	100	56

Total numbers for S. Western Australia and Gippsland in parentheses

Conclusions

From the preceding discussion and Table 4 three conclusions are evident:

1. The Victorian Mallee reptile fauna is distinct from that of the Gippsland region, even though the regions are of approximately the same area and are only separated by about 200 miles.
2. The Victorian Mallee reptile fauna is very similar to that of S. Western Australia, although the regions are separated by over 800 miles.

3. Although there is only a small degree of similarity between the reptile faunas of Gippsland and S. Western Australia, this nevertheless supports the suggestion of Main et al. (1958) that there was an earlier faunal connection between these two regions.

These conclusions are consistent with placing the Victorian Mallee into Spenceer's (1896) Eyrean subregion and Gippsland into the Bassian subregion. Also, as has already been recorded by Keast (1959), the occurrence of 6 Bassian (Gippsland) reptile species in S. Western Australia supports Serventy & Whittell's (1951) idea that the South-Western subregion is a blending of Bassian and Eyrean elements, with the Eyrean components predominating.

Acknowledgements

The author wishes to thank the following people and institutions for help in collecting the data presented in this paper:

Miss J. Dixon and Mr J. Coventry of the National Museum of Victoria, Melbourne; Mr R. Warneke and Mr J. Seebach of the Victorian Fisheries and Wildlife Department; Dr M. J. Littlejohn and Mr A. A. Martin of the University of Melbourne Zoology Department.

The author is indebted to Dr M. J. Littlejohn and Mr A. A. Martin for reading the manuscript and suggesting alterations.

The assistance of a Commonwealth Postgraduate Award during the collection and study of data is gratefully acknowledged.

References

- BARRETT, C., 1926. Some Victorian lizards. *Vict. Nat.* 43: 192.
- BLACKBURN, G. M., 1964. The other Mallee in Victoria. *Ibid.* 81: 160-163.
- BRAZENOR, C., 1932. A new Victorian lizard. *Ibid.* 49: 171.
- , 1951. On the Victorian species of tuberculated *Diplodactylus*. *Mém. Nat. Mus.* 17: 215.
- BOULENGER, G. A., 1885-1887. *Catalogue of Lizards in the British Museum of Natural History*. Vol. 1, 2, & 3. London.
- , 1893-1896. *Catalogue of Snakes in the British Museum of Natural History*. Vol. 1 & 3. London.
- CENTRAL PLANNING AUTHORITY, 1952. *Resources Survey—Mallee Region*. Melbourne. Wm. Houston.
- GLAUERT, L., 1957. *A Handbook of the Snakes of Western Australia*. 2nd Ed. Perth. Paterson Brokensha.
- , 1961. *A Handbook of the Lizards of Western Australia*. Perth. Paterson Brokensha.
- KEAST, A., 1959. The reptiles of Australia. Ch. VII. In Keast, Crocker, & Christian (ed.) *Biogeography and Ecology in Australia*. Den Haag. W. Junk. 115-135.
- KERSHAW, J. A., 1917. Two snakes new to Victoria. *Vict. Nat.* 34: 167.
- , 1918. Complete list of Victorian snakes. *Ibid.* 35: 30-32.
- , 1925. *Furina occipitalis* swallowing a *Typhlops* sp. at Patchewollock. *Ibid.* 42: 57.
- , 1927. Victorian reptiles. *Ibid.* 43: 335.
- KINGHORN, J. R., 1956. *The Snakes of Australia*. 2nd Ed. Sydney. Angus & Robertson.
- KREFFT, G., 1863. Two papers on the vertebrates of the lower Murray and Darling Rivers and on the snakes of Sydney. *Trans. Phil. Soc. N.S.W.*: 1-33.
- LEEPER, G. W., 1955. *Introducing Victoria*. Melbourne. Melb. Uni. Press.
- LOVERIDGE, A., 1934. Australian Reptiles in the Museum of Comparative Zoology. *Bull. Mus. Comp. Zool. Harvard* 77: 244-383.
- LUCAS, A. H. S., and FROST, C., 1893. The lizards indigenous to Victoria. *Proc. Roy. Soc. Vict.* 6: 25-92.
- MAIN, A. R., LEE, A. K., and LITTLEJOHN, M. J., 1958. Evolution in three genera of Australian frogs. *Evolution* 12: 224-233.
- MCCOY, F., 1878-1890. *Prodromus Zoologica Victoriae*. Melbourne.
- MITCHELL, F. J., 1948. A revision of the lacertilian genus *Tympanocryptis*. *Rcc. S.A. Mus.* 9: 57-86.

- , 1950. The scincid genera *Tiliqua* and *Egernia*. *Ibid.* 9: 275-308.
- , 1951. The S.A. reptile fauna, Pt 1. Ophidia. *Rec. S.A. Mus.* 9: 545-557.
- ROMER, A. S., 1956. *Osteology of the Reptiles*. Chicago. University of Chicago Press.
- SERVENTY, D. L., and WHITTELL, H. M., 1951. *Handbook of the Birds of Western Australia*. Perth. Paterson Brokensha. 44.
- SPENCER, W. B., 1896. Summary in Vol. I, Spencer, W. B. (ed.) *Report on the Work of the Horn Scientific Expedition to Central Australia*. Melbourne. Melvin, Mullen, & Slade. 139-199.
- WAITE, E. R., 1918. A Review of the Australian blind snakes (Fam. Typhlopidae). *Rec. S.A. Mus.* 1: 1-38.
- , 1929. *The Reptiles and Amphibians of South Australia*. Adelaide. Harrison Weir.
- WORRELL, E. R., 1961. Herpetological name changes. *W. Austral. Naturalist* 8: 26.
- , 1963. *Reptiles of Australia*. Sydney. Angus & Robertson.
- ZEITZ, F., 1920. Catalogue of Australian lizards. *Rec. S.A. Mus.* 1: 181.